

AMENDMENT AFTER FINAL  
Serial No.: 09/676,423

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July 28, 2004

REMARKS

Claims 1 – 2 and 4 – 28 remain in the application. Claims 11 – 27 are allowed. Claims 1, 2, 6, 9 and 28 stand finally rejected. Claims 4, 5, 7, 8, and 10 are objected to for depending from a rejected base claim. A proposed amendment to claims 6, 9, 18 and 28 is offered herein. No new matter is added.

The Examiner objected to the specification for formal reasons, requiring serial numbers and current status of related applications. Such status and serial numbers were provided with the previous response. Reconsideration and withdrawal of the objection to the specification is respectfully solicited.

A proposed amendment to claim 18 and the specification is offered and is formal in nature. Specifically, the amendment to claim 18 is to include a period at the end of the claim. With respect to the amendment to the specification, terminal edges 210, 212, 214, 216 and 218, are inadvertently initially indicated as non-terminal edges and subsequently, correctly referred to as terminal edges. Further, terminal cuts are indicated by reference to 220, 222 and 224, which are not in the drawings. Accordingly, 220, 222 and 224 are replaced in the specification with W<sub>1</sub>, W<sub>2</sub> and W<sub>3</sub>, which are attached to and clearly related to the same described terminal cuts in Figure 4. Thus, the amendment is supported by the written description. No new matter has been added. Entry of the amendment to claim 18 and the specification is respectfully solicited.

Claims 6, 9 and 28 are finally rejected under 35 USC §112 formal reasons. Claims 4, 5, 7, 8 and 10 are objected to for depending from rejected claims 6 and 28. Responsive to the final rejection, a proposed amendment to claims 6, 9 and 28 has been offered herein, adopting the Examiner's suggestion from the final rejection. Accordingly, entry of the proposed amendment is in order. Further, the proposed amendment to claims 6 and 28 overcomes the objection to dependent claims 4, 5, 7, 8 and 10. No new matter

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has been added. Accordingly, claims 4 – 10 and 28, amended as proposed are believed to be allowable.

Claims 1 and 2 have been finally rejected over Hunt et al. (U.S. Patent No. 6,629,123) in view of Ibe et al. (U.S. Patent No. 6,437,804) under 35 U.S.C. §103(a). The final rejection is respectfully traversed.

In finally rejecting claims 1 and 2 over Hunt et al. and Ibe et al. the Examiner has essentially repeated the rejection of the prior office action. Thus, the Examiner asserts that step (a) in part and step (e) of claim 1 are disclosed by Hunt et al. at col. 23, lines 13 – 23. The Examiner further asserts that step (a) in part and steps (c) and (d) are disclosed in Hunt et al. at col. 24, lines 8 – 64. The Examiner looks to Ibe et al. to disclose step (b) of assigning terminal nodes to the communication graph at col. 5, line 64 – col. 6, line 3 and col. 8, line 31 – col. 9, line 25.

The Examiner was not convinced that Hunt et al. at col. 24, lines 8 – 28 teaches something quite different than “identifying high communication edges within said communication graph, said high communication edges having a weight indicating a communication level exceeding the communication level for a selected terminal node” (emphasis added) as claim 1 recites. In responding to this assertion, the Examiner asserts that “the features of steps (c) and (d) of independent claim 1 seek to identify edges that have a high communication cost, and eliminate those edges from the minimum cut solution of the graph. This is the same problem that is addressed and solved by Hunt.” While the Examiner may be correct in stating that Hunt is trying to eliminate edges with a high communications cost from the min cut solution, that is not what claim 1 recites. Instead, claim 1 recites identifying specific high communications edges, i.e., those “edges having a weight indicating a communication level exceeding the communication level for a selected terminal node” and specifically excluding those identified edges from the min cut solution.

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This is described in the specification in further detail beginning at page 10, line 14 and in particular in the above amended paragraph with reference to Figure 4.

“Essentially, the Machine Cut method eliminates from inclusion in the min cut solution, any terminal or non-terminal edge with heavier communication (i.e., its weight exceeds) than all but the terminal node with the heaviest level of communication.” *Id.* So, in this example, where the terminal cut weights,  $W_1$ ,  $W_2$  and  $W_3$  are 40, 30 and 10, respectively,  $W_2$  is the second heaviest terminal cut and is heavier than all of the edges except 202, which has a weight of 35. “So, edge 202 can be excluded from consideration for inclusion in the min cut solution. Preferably, edge 202 is collapsed, combining nodes 182 and 188, as well as merging (then) parallel edges 198 and 200.” *Id.* When in this example, the edge 202 is collapsed to merge non-terminal nodes 182 and 188, a new edge forms between the merged non-terminal node and non-terminal node 190 that has a weight of 50, the combined weight of non-terminal edges 198 and 200.

In responding to the applicants’ argument that Hunt et al. assigns weights based on placement rather than communications and thus, fails to consider communications levels between client and server nodes: The Examiner has responded asserting that the applicants “only (consider) a portion of what is shown by Hunt. Specifically, infinite weights are only attached to nodes that are required to be placed with the server or client. Since the placement of these components is mandated by the particulars of the application, the weights are assigned to reflect this.” However, this is not mandated by the particulars of the application, but by a decision to place components or application units based on communications type before assigning weights and rather than considering the level of communications between the application and the particular unit. Thus, Hunt et al. teaches that “each application unit that must reside on the client—for instance, because it directly accesses GUI functions … (and) each application unit that must reside on the server—because it directly accesses storage” is assigned an infinite weight. *Supra.* However, there is nothing forcing the infinite weight assignment as described by Hunt et al., other than the requirement that the particular component or application unit

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*be in direct communications* with the particular terminal node, regardless of the level of such communications. Furthermore, by assigning an infinite weight to these terminal edges, Hunt is affirmatively obfuscating the level of communications between the affected terminal nodes and connected non-terminal nodes. Consequently, there is no way to tell whether the terminal cut for such a terminal shows a level of communications that any edge exceeds.

Applying hunt et al. to the example of Figure 4 of the present application, if for example, non terminal nodes 188 and 190 were directly accessing functions on terminal nodes 206 and 208, respectively, edges 216 and 218 would be assigned infinite weights. Consequently, terminal cuts W2 and W3 have higher (infinite) weights than 40 at W<sub>1</sub>. As a result, none of the non-terminal edges 192, 194, 196, 198, 200 or 202 exceeds any of the resulting (Hunt et al.) terminal cut weights. Very clearly, application of Hunt et al. results in a different solution than the present invention as recited in claims 1 and 2. Thus, it is of no moment that in "other cases where the task components are placed in an effort to reduce the communication costs, the weights are assigned based on the communication costs of the edge (col. 24 lines 29-64, 'Each edge in the commodity-flow graph effectively represents the cost in time of distributing that edge')."

With respect to Ibe et al., the Examiner asserts that, "although the anchor nodes of Ibe are defined as those having control agents, the use of the anchor nodes to determine independent nodes is in the same manner as the claimed invention uses terminal nodes." Even if one were to accept that Ibe et al. teaches using anchor nodes in the same manner as terminal nodes, this still does not overcome the above shortcomings of Hunt et al. to result in the present invention as claimed in either of claims 1 or 2. Therefore, because neither Hunt et al., nor any other reference of record, teaches "identifying high communication edges within said communication graph, said high communication edges having a weight indicating a communication level exceeding the communication level for a selected terminal node" (emphasis added) and, because Ibe et al. anchor nodes are

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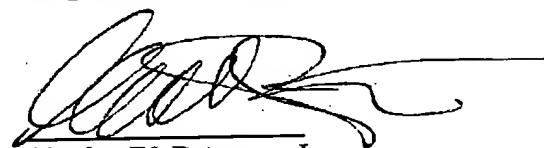
quite different from terminal nodes in both form and function, Hunt et al. in combination with Ibe et al. does not result in the present invention as recited in claims 1 and 2. Reconsideration and withdrawal of the final rejection of claims 1 and 2 over Hunt et al. in view of Ibe et al. under 35 U.S.C. §103(a) is respectfully solicited.

The applicants thank the Examiner for efforts, both past and present, in examining the application. Believing the application to be in condition for allowance, both for the amendment to the claims and for the reasons set forth above, the applicants respectfully request that the Examiner enter the amendment, reconsider and withdraw the objection to claims 4 – 10 and the specification, reconsider and withdraw the final rejection of claims 1, 2 6, 9 and 28 under 35 U.S.C. §§103(a), 112 and allow the application to issue.

Should the Examiner believe anything further may be required, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below for a telephonic or personal interview to discuss any other changes.

Please charge any deficiencies in fees and credit any overpayment of fees to IBM Corporation Deposit Account No. 50-0510 and advise us accordingly.

Respectfully Submitted,



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